GARDEN AND FOREST.

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William A. Stiles.

WILLIAM AUGUSTUS STILES, the editor of this journal since its conception and its general manager for many years, died at the home of his sister in Jersey City on October 6th, after an illness of several months. He was born in Deckertown, in northern New Jersey, near the Pennsylvania line, on the 9th of March, 1837, where his grandfather had removed in 1819, and was the son of Edward A. Stiles and Evelyn Belmont Howell, members of old and respected New Jersey families. His father, who had been educated for the ministry, opened in 1833 a small private school on his farm near Deckertown, which rapidly grew in size and importance, and when he retired from it thirty years later had become the most important institution of learning in northern New Jersey. In this school William A. Stiles, who as a boy was distinguished for intense love of reading and for proficiency in music and mathematics, was fitted for college. He was graduated with honors from Yale in the class of 1859, and the following year became a teacher in his father's school and began the study of law. His health had never been robust, and his sight, injured in boyhood by excessive reading, now became greatly impaired, and he was obliged to give up his legal projects, and in 1864 went across the Isthmus of Panama to San Francisco in the hope of deriving benefit from the sea voyage. This expectation was more than realized, and on arriving in California he was able to accept a position as teacher in English literature and music in a school in Oakland, but soon abandoned teaching to become a member of the corps of engineers engaged in running the line for the Central Pacific Railroad across the Sierra Nevada. The strain upon his eyes in this employment proved too severe, and after a long illness in San Francisco he returned to New York nearly blind. Gradually recovering, he began to study politics and to write political articles for the newspapers. This led to his appointment as a gauger in the New York Custom House, a position which, although never congenial, he continued to fill for several years, leaving it finally to become a member of the editorial staff of the *New York Tribune*, with which he remained closely connected until his death. In 1880 and in 1883 he was defeated as Republican candidate for the State Senate from Sussex County, New Jersey, and for the three years following his second defeat he served the New Jersey Senate as Secretary.

After his return from California Mr. Stiles became interested in plants and their cultivation on the farm and in the garden, and in urban parks, and began to write about them, his contributions to the daily papers on these subjects attracting much attention, and in 1883 he became, in addition to his editorial duties on the *New York Tribune*, the agricultural editor of the *Philadelphia Press*. When the establishment of a weekly journal devoted to gardening and forestry in this country was decided on, Mr. Stiles was selected as the editor. The readers of GARDEN AND FOREST need not be told how he has performed his difficult task. Every week for nearly ten years they have seen the results of his rare editorial judgment, his literary skill, his good taste and unflagging zeal in advancing the knowledge of the special subjects to which GARDEN AND FOREST is devoted. He has been more, however, than a brilliant and successful editor of a technical journal; keen love of nature and sympathy with the cravings of the poor shut within city walls from the sight and enjoyment of the country made him fully understand the value and true meaning of urban parks, and for twenty years, always with that modesty which was one of his strongest characteristics, but with inflexible purpose, he has stood between the parks of this city and the men who at different times and under different pretenses have tried to deface them. His pen saved Central Park from the speedway which threatened to ruin its rural character and destroy its true value. He preserved for the people the charming sylvan glade where it was proposed to place the menagerie which had become distasteful to some of the wealthy residents on Fifth Avenue, and he made it impossible to use Central Park for the Columbian Exposition. It was his forethought and technical knowledge which have modified and delayed the schemes of the men who in their zeal for a botanic garden are willing to deface, unnecessarily, Bronx Park, and could his life have been prolonged this most valuable and beautiful of all the rural possessions of the city might, perhaps, have been spared for the best enjoyment of the public. These are a few of the conspicuous services which he has performed for the parks of this city, but for years hardly a month has passed in which he has not preserved them from some dangerous invasion. An educator in all that relates to parks, reaching the public ear through the press, which had unbounded confidence in his judgment and integrity of purpose, his service to the people has not been merely local; his example has stimulated and his words have instructed, and now in every American community there are who understand the significance of city parks and the difficulties which those who labor to make them most useful have to encounter.

Mr. Stiles was a man of wide and deep sympathies and of unusual intellectual activity in many directions; he loved Nature in all her aspects, delighting in the beauty of trees and flowers in the forest and in the garden, and in their harmonious arrangement; he loved the song of birds, quiet sylvan lanes and sparkling waters. To few men did music mean so much. The love of it came from his mother, a woman of strong intellect and great refinement, from whom, too, came his ready and brilliant wit and keen perceptions. Music was one of the vital and influential forces of his life, and although in later years he was not, except for his own pleasure, a performer, he knew music thoroughly; and his deep insight and instinct for clear analysis made his musical criticisms a source of unceasing pleasure to those who heard them. Other subjects occupied his thoughts. A constant and profound student of the Bible and truly reverential, he was deeply read, too, in English literature and speculative philosophy. A remarkable mathematician, he found mental recreation in solving the most difficult problems; learned

in agricultural chemistry and the breeding of domestic animals, he kept himself abreast of all the latest advances in the science and practice of agriculture. A politician in the best sense and alive to the dignity of citizenship, he enjoyed the game of politics, as he did a horse race, and no man not a professional was better versed in the technicalities of the baseball field and the football gridiron. Shielding himself behind his invincible modesty, this many-sided man long escaped the publicity which he never sought or desired, but eventually the knowledge of his true value spread beyond his personal friends and associates. Two years ago he was made one of the Park Commissioners of this city, a position for which he was in every way admirably equipped, and gradually the public has learned that he was one of the strongest and most valuable men in this community.

His death is a serious loss to the readers of Garden and Forest, and to every one in the United States interested in landscape-gardening, horticulture and the care and protection of our national and state forests. To this city at this particular time his death is a great misfortune, for it leaves it without its most intelligent and powerful champion in the constantly recurring fight between the people and the would-be spoilers of their parks. Of his life-long devotion to those nearest to him by blood, untiring in its constancy and tenderness, we must not speak here; nor can we trust ourselves to speak of the faithful friend and associate tried by the test of long years of intimate relations, the wise counsellor and the joyous companion. Men who knew William A. Stiles loved him, and to them his memory will be immortal.

Notes on Cultivated Conifers.—II.

TUMION, or Torreya as it is more generally known, is a genus of small trees with elongated lanceolate sharp-pointed alternate leaves spreading in two ranks, and solitary dicœcious axillary flowers, the male composed of numerous stamens with filaments dilated above into four anthers connate into a half ring, the female of a single erect ovule surrounded by a fleshy aril which becomes confluent with the woody testa of the seed, the whole forming a plum-like fruit peculiar in the deep folds of the albumen of the seed which resembles that of the Nutmeg. There are now four species known confined to western Florida, California, Japan and northern China, although during the Tertiary period the genus inhabited the Arctic Circle and then spreading southward existed for a long time in Europe, from which it has now entirely disappeared. All the existing species produce handsome close-grained pale yellow durable wood, well adapted for cabinet-making, for which it is used in Japan in considerable quantities.

None of the species of Tumion have taken particularly well to cultivation or shown themselves really desirable garden plants. The Florida Tumion taxifolium, which is the type of the genus, is one of the least widely distributed North American trees, being confined to a narrow strip of bluff about forty miles in length along the eastern bank of the Apalachicola River from River Junction to Bristol. This tree can be kept alive in eastern Massachusetts in sheltered, well-shaded positions, and occasionally individuals have survived a number of years in gardens near New York and Philadelphia.

The California species, Tumion Californicum, which is really a noble tree, occasionally one hundred feet high, with a trunk four feet in diameter, is not at all hardy in the east, although it is occasionally cultivated in Europe, where it was introduced in 1851 and has produced flowers, although it gives slight promise of acquiring in Old World gardens the beauty which distinguishes it in the forests of northern California.

Tumion nuciferum, the Japanese Kaya, is common in the forests of central and southern Hondo and in those of the southern islands as an undershrub or small tree twenty or thirty feet tall, and rises occasionally to the height of eighty feet, with a trunk four or five feet in diameter, forming a tree unequaled in the massiveness of its appearance and the beauty of its bright reddish bark and dark green, almost black, foliage. Although introduced into Europe more than fifty years ago, the Japanese Tumion, like the other species, has never really flourished in gardens for the reason, perhaps, as has been suggested, that most of the cultivated plants have been raised from cuttings, the seeds of Tumion being exceedingly difficult to transport without the loss of vitality as they soon become rancid. The nature of the climate where it grows, however, in central Japan, and the hardiness here of its associates in its native forests give some hope that it may be possible to cultivate successfully this beautiful tree in the eastern states. The kernels of the seeds have a pleasant, resinous flavor, and in Japan are largely used as food; an oil, kaya-no-abura, used in cookery, is pressed from them and is an article of some commercial importance.

Very little is known of the Chinese Tumion grande, which has not been tried, probably, in our gardens, and which, possibly, will be found identical with the Japanese tree.

Taxus, the Yew, is a genus rather widely distributed through the northern hemisphere, with a small number of species all very similar in habit and foliage and nearly identical in flowers and fruit; it is characterized by short linear, alternate, sharp-pointed, dark green leaves disposed in a subspiral and appearing two-ranked on lateral branchlets by the twisting of the short compressed petioles, dicœcious or monœcious solitary axillary flowers, the male with from four to eight stamens collected into a globular turbinate head, the female with an erect ovule on a ring-like disk, which enlarging becomes a bright red succulent aril, and nearly encloses the ripe seed. Six species are now known; they are widely distributed through eastern and western North America, Mexico, Europe, northern Africa, and western, central and eastern Asia, the descendants of Yew-trees which have existed since Miocene times.

The best known of all the Yew-trees, Taxus baccata, has been cultivated for centuries, and the oldest trees planted by man in Europe are probably Yews, which are believed to live occasionally for a thousand years. Taxus baccata is scattered over western and central Europe and the mountains of southern Europe and northern Africa; it reaches southern Scandinavia on the north, and extends through western Asia to the temperate Himalayas, where it is common, ascending to elevations of twelve thousand feet above the sea-level. In India the Yew attains its largest size, sometimes growing to the height of a hundred feet, with a trunk five or six feet in diameter. Usually, however, it is bushy in habit, and trees more than thirty or forty feet in height are not very common. Long before the Yew attracted much attention in modern Europe as a garden plant the wood was in great demand for the manufacture of bows, and for centuries after the Anglo-Saxon conquest Yew-wood bows were the principal weapons of the English. It is still considered the most valuable of the European woods for cabinet-making, and it is manufactured into many small articles of domestic use. In some parts of India the trees are venerated and their wood is burnt as incense, while both the bark and leaves are employed by the native physicians in the treatment of various human diseases.

During the seventeenth century, when the fashion for formal gardens and clipped trees prevailed in Europe, the Yew, which endures better than most trees an annual shortening of the branches, was cut into all sorts of fantastic shapes and was largely planted in hedges, for which purpose it was well suited and is still frequently used. The Yew has always been the favorite ornament for English churchyards, and no English park or garden is considered complete without it.

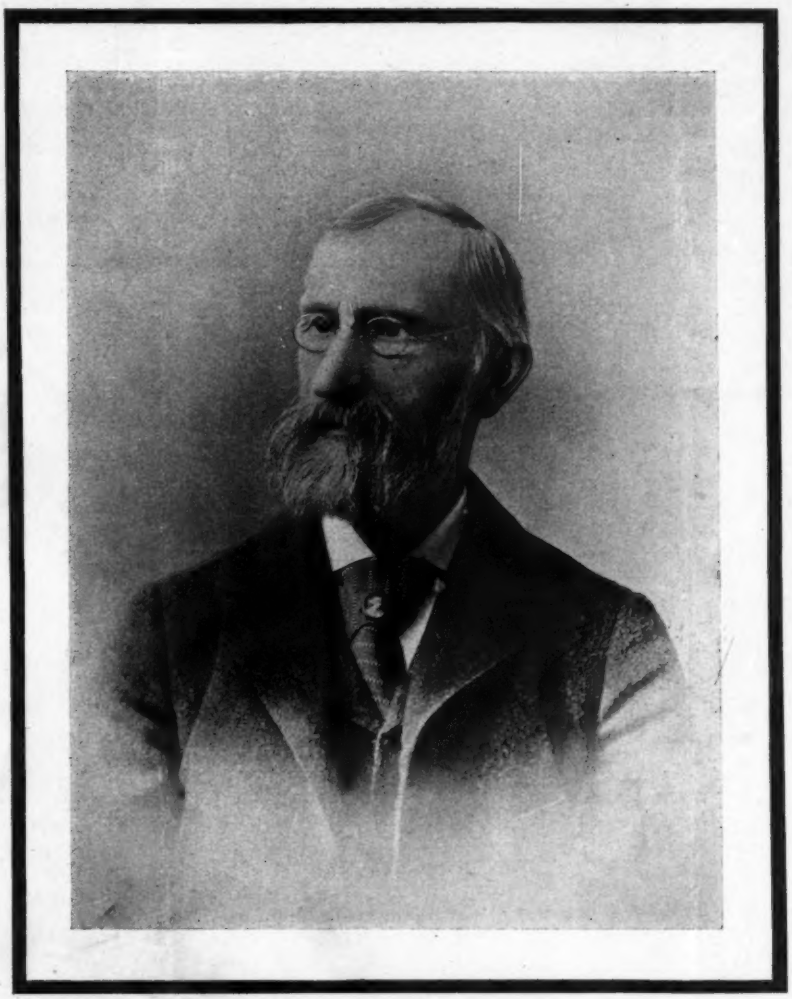
Taxus baccata must have been brought to eastern North America more than a century ago, as there are a number of large individuals in New York, Philadelphia and Balti-

more, for everywhere south of Cape Cod it appears to be perfectly hardy. Further east it suffers from the cold in severe winters, and cannot be considered a desirable tree for general planting in eastern New England, although it can be made to grow indifferently in well-protected situations.

There are found in gardens a number of interesting forms of this tree; of these the most distinct is the so-called Irish or Florence Court Yew, Taxus baccata fastigiata, distinguished by its upright branches which form a narrow compact pyramid somewhat broadened at the apex in old age, and large, spirally arranged, very dark green leaves. The plants of this variety are all female, and have been propagated from one or two individuals found during the last century on the mountains of County Fermanagh and planted in the garden at Florence Court, a seat of the Earl of Enniskillen. This upright-growing Yew, which is, perhaps, the most distinct and desirable of all fastigiate evergreens, appears perfectly hardy about New York and southward, but does not support the climate of eastern New England, where, however, it is occasionally used as a tub-plant for the decoration of terraces and formal gardens. The Devoston Yew, distinct in its long, wide-spreading and somewhat pendulous branches and longer and darker leaves than those of the ordinary form, is a seedling variety which is now often cultivated in Europe and is occasionally met with in the gardens of the eastern states. Another form, T. baccata adpressa, with numerous spreading branches and very short broad leaves, was long supposed to be a Japanese or Chinese plant. Only the female is known, and although now generally supposed to be a seminal variety of Taxus baccata, its origin is still doubtful. It is certainly rather hardier than other forms of Taxus baccata, and, although it grows here very slowly and remains shrubby, it can be made to live in eastern Massachusetts. Forms of Taxus baccata with yellow and with pale or silvery leaves are favorite plants in Europe, and they are occasionally cultivated in the United States; curiously enough, the golden-leaved Yew is much hardier in New England than any of the other forms of this tree with the exception of that last mentioned, and with a little care it can be grown in sheltered positions in the neighborhood of Boston, although the tips of the branches are often browned during severe winters. Nurserymen have given names to many other seminal varieties of the European Yew, but none of these is particularly distinct or valuable, and none of them can be expected to thrive east of Cape Cod.

Of the North American Yews the very local Taxus Floridana, which only grows with Tumion taxifolium on the banks of the Apalachicola, is practically unknown in gardens, although young plants were introduced two years ago into the Biltmore Arboretum; it is not probable that it would prove hardy at the north, or that it would be sufficiently distinct as a garden plant to warrant any special culture or care. The Pacific coast Yew, which under favorable conditions becomes a tree eighty feet in height, with a trunk occasionally four feet in diameter, has not been fairly tested yet in the east. It grows not only on the coast as far north as Queen Charlotte Islands, but it spreads eastward to the western slopes of the northern Rocky Mountains in the United States and to the Selkirk Mountains in British Columbia, where the winter cold is much more severe than it is in New England. The snowfall, however, is greater, and small plants are protected all winter and until late in the spring by a deep covering of snow, while in summer the ground, shaded by the dense coniferous forest, never becomes very dry in the situations which this tree selects. The individuals which have failed in the east have been derived from the coast region, and better success might be obtained with plants from northern Montana, and an attempt to obtain a hardy race of this tree will be made in the Arnold Arboretum.

The third United States Yew, Taxus Canadensis, is a low shrub, with nearly prostrate, wide-spreading branches, and is a common inhabitant of northern woods, often covering large areas of low moist soil in their dense shade, and is distributed from Newfoundland to Lake Winnipeg, and southward to Virginia and Iowa. This is, of course, a perfectly hardy plant, although it only thrives in moist, shaded soil, and it might be used more frequently than it is to cover the grounds in parks and gardens.



William A. Stiles.—See page 399.

Taxus cuspidata inhabits Manchuria, Corea and the Island of Yezo, where it is widely scattered through the forests of deciduous-leaved trees, and where it often rises to the height of fifty feet with a tall, straight stem frequently two feet in diameter. In Japan this Yew is a favorite garden ornament, being one of the plants most generally cut into fanciful shapes, for like the other species it can bear the shears. It was introduced into the eastern United States in 1862 and has proved to be perfectly hardy as far north at least as Boston; it grows rapidly in cultivation and promises to become here a large, long-lived tree and a really important and valuable addition to the list of evergreens which can be successfully cultivated in the northern states. There is a dwarf compact form of this plant with short dark green leaves in cultivation in this country, which probably originated in Japanese gardens; often appearing under the name of Taxus brevifolia, it must not be confounded with the true T. brevifolia of the Pacific coast.

I have seen in California a Yew with fastigiate, somewhat spreading branches, which had been imported from Japan and which is evidently another garden form of Taxus cuspidata. This distinct plant, however, does not appear to have been tried in the eastern states.

All the Yews can be most quickly multiplied by cuttings which strike readily; they all prefer shade and moist deep soil, and they are all slow-growing and long-lived.

All the known plants of the Yew family which succeed or are likely to flourish in the north-eastern United States have now been mentioned, and it will be seen that in this important and widely distributed family only the Ginkgo, the Japanese Yew and the dwarf Yew of the northern states are really valuable and important garden plants in the north-eastern states. *C. S. S.*

Magnolia glauca.

"The most part of their underwood are Bayes and such like."—*Hakluyt's Voyages*, vol. ii.

THE Swamp Magnolia, M. glauca, with its long coastal range and numerous inland stations between Gloucester, Massachusetts, and southern Florida, varies from a deciduous shrub at its most northern limit to an evergreen tree in the extreme south. Its most common form is that of a shrub from six to twenty feet high, and except for a straggly habit resulting from rapidity of growth, it possesses almost all the points necessary for a perfect plant, having extreme beauty of foliage and flower and delicious fragrance.

The young plants generally develop several shoots that remain almost vertical until the plant is well above the surrounding jungle, when the branches and also the leaves spread laterally. The growth is very rapid, ranging in one season from six inches to five feet, and the flowering branches develop normally three growing points, of which one usually far outgrows the others.

The thick leaves, from three to six inches long, with their shining upper surface reflecting the light and the silver sheen of their lower surface, are the most beautiful to be found among our native plants, for their beauty is of texture and is quite independent of weather, though there are times and seasons when they are unusually striking. These contrasted surfaces attracted the eyes of all the early explorers. The extreme rapidity of growth is understood when we consider the large area of leaf surface and examine the tissues. The upper epidermis is very thick; there is a double and often a triple row of palisade cells, and the lower epidermal cells are extended into two-celled needle-pointed hairs as long as the leaf tissue is deep. Besides this mat of silky fur there is wax on the lower epidermis, so the leaves have immense assimilative and protective powers.

The flowers, the smallest of our native Magnolia-blossoms, are of an exquisite ivory-white from two to three inches in diameter; they are borne on short stalks with outspread foliage leaves that fall and flutter about the flowers, so that, except for their perfume, one might easily pass a blossoming shrub without seeing any of the flowers. The small fruit-cones, about two inches long, have scarlet seeds pendulous from very short filaments.

The inland stations of the Swamp Magnolia have several times been noted in Garden and Forest (see vol. vii., page 398, vol. viii., page 79), and the most westerly station of which I know, a swamp in the South Mountain at the headwaters of the Conococheague, supplied the sprays photographed by Mr. George Keen, of Harrisburg, and reproduced on page 403 of this issue. The South Mountain Magnolias are now, owing to the invention of the bicycle, in danger of extinction; they may be invisible, but their fragrance betrays them, and the man who collected for me lamented the terrible breakage and waste. Like all true woodsmen, he possessed that knowledge of tree growth and gentleness of touch which enabled him to gather with the least damage to the plant.

The Magnolias of to-day are a mere survival, a remnant, of that once widespread family that, so far as we know, first appeared in America in the Upper Cretaceous. In Tertiary times it was found in central Europe, Greenland, Arctic and mid-continental America, and then was cut off in the Ice Age, everywhere except in south-eastern Asia and south-eastern America. In historic time the written records of Magnolia begin with that first voyage to Virginia in 1584, where on the islands of Pamlico Sound its beauty and fragrance were noted by those keen-eyed old sea-dogs, whose conciseness of description is unequaled. A century later that careful observer and judicious collector, the Rev. John Bannister, took plants of M. glauca from Virginia to England, where they were planted in the Episcopal garden at Fulham, by Henry Compton, Bishop of London. Here the Magnolia found an old swamp friend in the fine large tree of Red Maple, taken over some thirty years earlier. About this time the Rev. Cotton Mather, also busy with observations and collections of a less pacific nature, as he was journeying from Salem to Gloucester, paused in his pursuit of witches in order to discover the source of an unknown fragrance, and made known that farthest north colony of M. glauca that has since given its name to the town of Magnolia. Exportations of Magnolia to England were continued early in the eighteenth century, for Collinson in 1735 wrote to Bartram "not to send any more cones of your swamp Laurel," but the demand must have increased, for two years later he wrote for more cones, saying "it is a fine plant, and when the wind turns up the silken side of its leaves it has a pretty effect." It is figured and described in Catesby's *Hortus Britanno-Americanus* as Magnolia lauri-folia (edition of 1763) and mentioned as one of the American plants with which "England should be inriched." The present specific name, glauca, was given by Linnæus, but the older name clung for some time. When Kalm visited Pennsylvania in the middle of the last century the common name was Beaver Tree, owing to the fondness of those animals for the succulent roots.

This native shrub with its long historic record, and growing in at least twelve of the Atlantic states, like all other Magnolias, is popularly supposed to be tropical, though by some curious mental perversion its name is also supposed to be of Indian origin. When we take the ordinary roadsides of the middle states to-day, and see the unsavory weeds growing by the million, there cannot too soon be strenuous efforts made to replace our Jimson and Pig weeds with those older and native growths of Rose and Viburnum, and cover seared brooksides with Rose-Bay and Magnolia, for one marked feature of all the old chroniclers is the unanimity with which they dwell upon the "sweetnesse and goodnesse of our native plants."

Harrisburg, Penn. *M. L. Dock.*

The Shad-bush is leafing again by the sunny swamp side. It is like a youthful or poetic thought in old age. I would not fear the winter more than the Shad-bush, which puts forth fresh and tender leaves on its approach.—*Thoreau.*

Fig. 52.—Sprays of Magnolia glauca.—See page 402.

Foreign Correspondence.

London Letter.

Polygonum lanigerum.—A large round bed filled with this plant is a conspicuous attraction on a lawn at Kew. It has a stout main stem one and a half inches in diameter, with from six to a dozen lateral stems springing from near the base, and the strongest stems are six feet high. Planted in mass it forms a shapely group covered with foliage down to the ground. The leaves are a foot long, petiolate, with a lanceolate blade from three to four inches wide, wavy and elegantly curved; the whole of the leaf is covered with a gray, almost silvery down, to which the plant owes its chief attraction. It is easily raised from seeds, which should be sown in February, and the seedlings may be planted in the open air in June. It is a native of Natal, and for its introduction we are indebted to Dammann & Co., of Naples, in whose catalogue for 1890 it was first offered. It is also figured in the *Gartenflora* in 1890, page 224, fig. 52, where it is described as a herbaceous perennial from six to ten feet high, with flowers in clustered spikes and of a carnation-red color. It is not hardy at Kew.

Verbascum delphicum.—Of the numerous Mulleins which deserve a place in the garden on account of their large handsome rosettes of leaves, this is one of the handsomest and at the same time one of the least known. It is a native of Greece, whence it has been introduced to Kew, where it is cultivated in a border in the open. The leaves, which form a bold rosette a yard or more in diameter, are broadly obovate, a foot and a half long and a foot in width, and are of a thick flannel-like appearance, gray-green in color, almost silvery white when young. The flowers are borne on a tall, branched, erect spike, and are yellow in color, as are those of most of the species of Verbascum. It should be raised from seed sown in spring.

Satureia montana.—This plant is usually consigned to the kitchen garden, where it is grown among the sweet herbs for seasoning in cookery, and is known as Winter Savory, the whole plant being highly aromatic. It is also worthy of a place in the herbaceous border, or even in the rock garden, as it forms a compact, hardy, suffrutescent evergreen two feet or so high, which in the autumn is covered with bright lilac-purple flowers. It has a prominent place among the rock plants at Kew, where for some time it has attracted general attention. It is a native of the south of France and other parts of Europe, and has been cultivated as a kitchen herb for more than 300 years. It is recommended to be grown near beehives, its fragrant honey being much appreciated. The Summer Savory, Satureia hortensis, is a hardy annual with similar properties, but it is not nearly so decorative as S. montana.

Buddleia variabilis.—This is a Chinese species of recent introduction, and from what I have seen of it a promising shrub for the garden. In the nursery of the Jardin des Plantes, Paris, I saw fine examples of it eight feet high and covered with attractive flowers in August this year. It has also flowered against a wall at Kew, and a figure of it will shortly appear in *The Botanical Magazine*. It was described by Hemsley from specimens collected in Ichang, etc., by Dr. Henry, and I believe it was introduced into cultivation by way of the French gardens. It forms a large freely branched shrub with quadrangular branchlets, lanceolate toothed dark green leaves three to twelve inches long, and dense, erect, cymose panicles of bright rosy purple flowers, the individual flowers being small, with a tube half an inch long and a limb quarter of an inch across. It appears to be quite hardy, and the flowering season for it is probably of some weeks' duration.

Cactus Dahlias.—An exhibition of Dahlias was a special feature of the last meeting of the Royal Horticultural Society. Sixteen new varieties were awarded certificates, and of these eleven were of the Cactus section. There can be no doubt that for cut-flower purposes the Cactus varieties are preferable to the others, and if they could be made to show their flowers well above the foliage when on the plant they would be equally superior for garden effect. At present they are not seen to advantage, owing to the excessive leaf-growth above the flowers. It was noteworthy that the single-flowered section, so popular a year or two ago, was scarcely represented. In their attempts to breed out the defect in the Cactus Dahlias above referred to growers are losing the quill-like character of the florets which is the most pleasing peculiarity of the pure Cactus sorts. Some of the new varieties which owe their origin to crossing the Cactus and Show sections are defective for this reason. I made a list of the pure Cactus sorts which I thought first-class, both in form and color; they are as follows: Miss A. Jones, crimson; Starfish, crimson; Gloriosa, bright scarlet, by far the most effective Dahlia exhibited, the color being of the most glowing hue and the form large and elegant, the falcate form of the florets being most pronounced; C. Woodbridge, deep maroon; Lady Penzance, sulphur yellow; Mrs. C. Turner, bright amber yellow; Fusilier, terra cotta; Beatrice, bright magenta; Delicata, flesh pink, yellow centre; Keyne's White, the purest white yet raised. With the exception of the last-named the above sorts were exhibited by Messrs. C. Turner & Sons, of Slough, who have held a high position among Dahlia growers and breeders for the past fifty years. I might add as a hint to growers of these plants that the removal of all the top superfluous shoots from the plants strengthens the flowers and permits of there being seen.

Early Chrysanthemums.—Exhibitions in September this year have been remarkable for the collections of flowers of Chrysanthemums shown. Breeders have been paying special attention to this point in recent years and as a consequence we have now numerous large-flowered varieties which bloom in September, that is to say, about two months earlier than the time formerly considered as the season for Chrysanthemums. At an exhibition held in the Aquarium on September 7th I noted a considerable number of Japanese sorts as well as pompons, and at the meeting of the Royal Horticultural Society, held on September 21st, several collections of Chrysanthemum blooms were shown. Some of these were so large and delicate that I suspected they had been forced, but I was assured they had been grown in the open air and had never been under glass. Japanese varieties, measuring six or eight inches across and of the most delicate colors, are, it appears, now available for September effect. Here is a list of the best of those I have seen so far: W. R. Prince, yellow; Milano, maroon; Barbara Forbes, white; Mytchett, white; William Laycock, pale yellow; Mons. Hoste, blush white, with wide florets; Lady E. Smith, white, broad florets; Lady Kennaway, rosy lilac; Miss E. Silsbury, pure white, large and elegant; Lady Fitzwygram, pure white, recommended as an excellent border variety; Madame M. Masse, rose-pink. These are all Japanese varieties, remarkable for the large size of their flowers compared with the early-flowering varieties hitherto known, and they may be grown either in pots in the open air, to be brought into the conservatory when in flower, or planted out in the herbaceous border for outdoor effect in autumn. They are already attracting the attention of growers of cut flowers for market.

London. *W. Watson.*

Cultural Department.

Chrysanthemums in the Garden.

My note about autumn flowers in last week's issue of Garden and Forest does some injustice to Chrysanthemums, in the failure to mention these as the leading autumn-flowering plants. But the last decade has seen the practical disappearance of Chrysanthemums from the open as plants grown by amateurs, and it did not occur to me to note them among the hardy flowers. It is just ten years ago, at an exhibition in Union Square, that the first Chrysanthemums grown for the cut-flower trade were shown in this city, and since that time their cultivation for that purpose has set a pace which an amateur can scarcely follow. That occasion

is specially memorable to me, for I then first came in touch with my friend Mr. Stiles, whose quick sympathies were at once enlisted in an experiment I was making in growing Chrysanthemums in the open under temporary protection, with entire success. This experience was put on record, together with an illustration of the shelter, in GARDEN AND FOREST, vol. i., p. 522. It seems a fitting time to urge on amateurs a more extensive cultivation of these flowers outside, for they are much neglected now in our gardens. However much one may admire the cultural skill of the florists in plumping up massive flowers, these immense blooms leave much to be desired by one who has formed his ideals from campaigning with plants in the border. The florists' chrysanthemum seems to me to bear about the same relation to the naturally grown flower that the conventionally correct man bears to the virile natural being.

There is no more enjoyable garden sight than a mass of glorious Chrysanthemum-flowers swaying on long stems in the crisp October breezes, and in the border under the autumn skies they take on new beauties unknown to flowers on potted plants under glass. The culture and protection are of the simplest. A very light protection will ward off early frost, and by using somewhat heavy cloth, to be rolled up during the day, and a stove for slight warmth at night, the Thanksgiving table may easily be brightened with the rich colors of these out-of-door flowers.

Elizabeth, N. J. *J. N. Gerard.*

Dahlia Notes.

THE Dahlia has been popular for at least a century, and with good reason, for certainly no other garden plant equals it in the profusion of its flowers, the variety of its forms and colors and the length of its time of blooming. At this time it seems to be entering upon a period of higher appreciation than it has yet enjoyed, not only in the two new classes, called Cactus and Decorative (ill-chosen terms), but in the older forms, even the oldest of all, the "show" varieties.

The single-flowered kinds, interest in which has been declining for a few years, are again growing in favor as new combinations of colors, greater delicacy and clearness of tints and fresh developments of form have appeared. Even the foliage of the Dahlia is now taking on an ornamental appearance, sometimes in color, as in the kinds whose young growth is of a purple shade, sometimes in manner of growth, varieties appearing from time to time whose foliage is almost as finely cut as that of a fern.

Another comparatively new point in single Dahlias is that some kinds have a disk which, instead of the yellow color which a few years ago was invariably present, is of a dark color before the expansion of the disk florets. In the varieties Mars and Sirius the disk is red before opening, while in the fine maroon variety, Robin Hood, the disk is also maroon. When the outer ring of the disk of this kind has unfolded its anthers we have a flower all maroon except a ring of bright golden-yellow, a highly-pleasing combination. There is also much variety in the manner of growth of Dahlias; the three varieties just named, as well as some others, instead of branching widely throw all of their flowers upward above the mass of foliage and present a vivid appearance. For some reason all the varieties which have this habit of growth have flowers of some shade of red; there are no pink, white or yellow kinds which carry their blooms in this way.

New "show" and "fancy" varieties continue to appear in the catalogues of the English raisers, and half a guinea continues to be the ordinary price the first year. The difference between these two classes is clear in definition and usually in the flowers themselves. All one-colored flowers and all "tipped" flowers where the tip is darker than the ground color are "show" kinds, while all striped flowers and all tipped ones in which the tip is lighter than the ground are "fancy" varieties. This seems plain enough, but Grand Sultan has a red tip on a yellow ground, yet is classed as a "fancy" because its petals are also striped. Mrs. Saunders is a "fancy," though oftentimes its tips, normally white on a yellow ground, are sometimes light red.

The distinction between these two classes, as far as it depends upon light and dark tips, will probably appear senseless to many, but if it were agreed to call all tipped flowers "fancies" countless disputes would arise at exhibitions, for many seemingly unicolored flowers have the base of the petals white, and a beaten exhibitor would often be tempted to question the verdict of the judges on the ground that his competitor had exhibited tipped flowers. Of course, flowers are as keenly enjoyed by growers who never exhibit as by those who do; but it is also true that flower exhibitions are refining and educational, and that competition for prizes is a cause of improvement in the specimens exhibited.

The Cactus and Decorative classes are confounded by most dealers as well as by most cultivators. The Massachusetts Horticultural Society made an effort this year to give the prize offered for Cactus Dahlias to true Cactus kinds only. The effort was not fully successful, for the collection which received the first prize had only four Cactus Dahlias out of twelve, the others being of the Decorative class. The American Dahlia Society gave its prizes for Cactus kinds last year entirely to Decorative kinds. If this course continues the true Cactus kinds will be buried under a mass of the other class, some of which, it is true, are exceedingly beautiful, though many are not.

In England the National Dahlia Society has adopted a list of recognized Cactus kinds, to which additions can be made of such kinds as have been judged worthy by a special committee. It would be an excellent plan if the same course were adopted in this country. I should be in favor of adopting the English list and such additions as may be made to it from time to time, providing that American-raised seedlings should also be recognized if they had been certificated as such. When the Cactus class came into existence, in the beautiful representative, Dahlia Juarezi, it became popular, and English growers, in order to share in the profit to be had from them, called all Dahlias Cactus that were not fit for the other classes; the natural result is now seen. I believe that any person who should see that unequaled flower, Gloriosa, would realize the undesirability of including such kinds as Robert Maher, Cannell's Favorite and the like in the same class.

Canton, Mass. *W. E. Endicott.*

Plants of Doubtful Hardiness.

A COLLECTION of plants in a well-ordered garden includes many exotics from temperate climates, whose constitution is not sufficiently hardy to withstand our rigorous winters. It is not always the degree of cold from which such plants suffer. The rarity of the atmosphere, especially in the United States, is such that the frequent alternations of freezing and thawing are most trying. The heavy snowfall in New England is favorable rather than otherwise, and the injurious effects of sharp changes of temperature are even more severely felt in localities farther south. As an illustration, Anemone Japonica suffers more in Virginia than it does at Rochester, New York.

The hardiness of a plant cannot always be inferred from the latitude in which it is native or from the fact that it comes from a district from which hardy plants come. There is no rule that all plants of a region are hardy or tender, as the case may be. Our gardens are full of foreign plants which have been introduced from countries where the climate is much milder than ours, and in many other respects different. The common European Box, Buxus sempervirens, is quite hardy about Boston, and it is not uncommon to see it used as an edging in old-fashioned gardens. Yet its congeners, the Yew and the Holly, are tender. A knowledge of the natural conditions under which particular plants grow is necessary to their successful cultivation, especially as to their hardiness. Mahonia Aquifolium is apt to burn and would be classed as tender, but it is not tender under proper conditions. With a fair amount of moisture and shade, it stands well enough. Seedlings of Azalea Indica, from the mountains of Japan, have been brought into the Arnold Arboretum. Taxus cuspidata and T. adpressa, from Japan, are both perfectly hardy when on their own roots, though doubtfully so when grafted upon the stock of the European T. baccata. Curiously, though, the variegated form of T. baccata is hardy where the green type perishes. We should be particular when importing these plants, especially standards, as they may be grafted on T. baccata stock. The same condition exists with many beautiful Rhododendrons, especially in those hybrids where the blood of R. arboreum prevails. In this connection it should be noted that all Rhododendrons grafted on the R. Ponticum stock are doubtfully hardy, and it is seldom that such as have the stock exposed will endure our winters. This is especially the trouble with imported standards.

For the cultivation of Hollies, evergreen Euonymus from Japan, Aucubas, Pittosporums, Yews of the Taxus baccata type, some Cupressus, Osmanthus, Rhapiolepis Indica, and all other half-hardy plants of a shrubby character, good cellar or pit room is necessary. A part of a barn cellar will answer, if this is properly set off so that the drainage and gas from manure will not reach the plants. This should be well lighted and thoroughly aired, and if there is a dry subsoil it must be

well watered a few days previous to planting. Two or three waterings during the winter should be sufficient, but extra care must be taken toward spring, when the roots begin to move. If a large number of plants are grown and additional space is required, partly sunken brick or stone pits may be used. These are preferably built on the north side of greenhouses as lean-to structures, or may be made as additions to the barn-cellar. If the roof is flat and there is danger that the kylights will be overweighted with snow, tilted lantern skylights may be built, and this will also provide a good means of ventilation.

Wellesley, Mass. *T. D. Hatfield.*

A Thin-skinned Americana Plum.

THE thick, tough and often harsh skin of the native plums is the most serious objection to their edible qualities, especially of those belonging to the Americana species. I have been looking hopefully for a variation in this species that should have the thin and mild skin of the Domestica plums, and now this variation seems to have appeared. A plum has recently been found in northern Minnesota that, with other valuable qualities, has a skin so thin and tender that it can be eaten, when fully ripe, as readily and with as little unpleasantness as the tenderest-skinned European plum. The fruit is very large for a native plum; it ripens early, and while not as rich as some of the finest Americana varieties, is sufficiently tender, juicy and pleasant to rank as first-class.

This plum, which is being introduced by a Minnesota nursery firm under the name Aitkin, appears to belong to the group that was described as Prunus nigra by Aiton, and that Professor Waugh proposes to designate as Prunus Americana, variety nigra.

Experiment Station, Madison, Wis. *E. S. Goff.*

Vegetable-garden Notes.

THE vegetable garden presents a somewhat desolate appearance since recent frosts killed all tender vegetables, and comparatively few green crops now remain. We always have all crops removed to the rubbish pile as soon as they are spent, for neatness, and because they are disagreeable to handle if allowed to remain until after sharper frosts. The season now drawing to a close has not been a favorable one for all vegetable crops. There was an abundance of rain, but the temperature in June, July and part of August was much below the normal. There is only about one-third of an average crop of potatoes. Sweet Corn was not up to the average, being poor until the end of August. A great deal of Fodder Corn, grown by farmers in this locality, failed to ripen. A sowing of first-crop Sugar Corn made on July 18th gave us good ears by September 27th; Crosby, sown on July 2d, was ready a week earlier. Tomatoes have not done as well as usual; on light lands the season has suited them fairly well, but in stiff, clayey loam, such as our soil is, the results have been less satisfactory. For an early variety and good cropper, Early Fordhook (Burpee's) has done well; the fruits cracked less than those of any other sort grown by us. Aristocrat, Stone, May's Favorite, Honor Bright and Autocrat all proved reliable main-crop varieties. The past season suited Peas better, perhaps, than any other vegetable, and late sowings of American Wonder and Nott's Excelsior have recently given us nice pickings.

Celery now commands attention, as it is the most important crop remaining in the ground. This season we have been fortunate enough to escape all blight on our plants, although many market-growers complain of the prevalence of rust and leaf blight. As the season advances plants which are being blanched by means of boards will need some protection overhead in the form of a scattering of leaves, hay or dry fern. Winter varieties, such as Boston Market and Kalamazoo, must now be earthed up. Preparatory to this work we mix some air-slacked lime in with the soil about the stems of the plants to keep worms away. Of course, there are various ways of wintering Celery, all of which have something to be said in their favor. We have tried them all and are convinced that the best way to have Celery in good condition throughout the winter, with a sweet nutty flavor, is to avoid storing it in caves, pits and cellars, and to earth it up where it grows and protect it overhead sufficiently to exclude frost, with leaves or seaweed and boards. This plan may involve a little more labor, and market-growers may never adopt it, but for private establishments we believe it to be the best method. Winter Celery should be planted on ground where water never stands; we place ours on light soil and it never fails to winter well.

Root crops, such as Parsnips, Beets, Carrots and Turnips, are stored in sand in an open shed and covered with leaves on the approach of cold weather. Parsnips should be left where they grow, or, at least, a part of the crop. Their flavor is improved by a few freezings. Those taken out in spring have a better flavor than the stored ones. Parsley may now be planted in a frame; the roots should be shortened and most of the large leaves removed. A few pots in a corner of a greenhouse will furnish a supply while frames are closed up by severe cold and snow. A few roots of Mint placed in boxes and brought into heat later on will also be useful. Lettuces from late sowings out-of-doors are now being transplanted into frames. Some of these will head up by Thanksgiving season, while others will continue the winter supply until they are succeeded by those sown in heat in the new year.

We have just made a sowing of forcing varieties of Tomatoes. These are intended to ripen from the end of February onward. Our earliest sowing now has fruits of a good size, and these will commence to ripen about the first of November. These plants need plenty of liquid-manure and the necessary attention in removing laterals, dead foliage, etc.

With the greater part of the vegetable garden cleared of crops, much may now be done to relieve the pressure of spring work. Beds of Horseradish, Asparagus and Rhubarb may be made now. Manure may be wheeled on vacant land and dug over as time allows, leaving it rough on the surface, so that frost may act on it. To make stiff, retentive soil more workable a dressing of lime rubble, finely screened coal-ashes, sand, road-scapings or crushed shells may be given. We usually do some trenching in our vegetable garden before the first of December, and always work in plenty of good manure. Ground which has been cropped for half a century is greatly benefited by this treatment, as abundant crops in the succeeding season show.

Taunton, Mass. *W. N. Craig.*

Plant Labels.

A SET of permanent labels which will suit the tastes of all cultivators of plants is not likely to be adopted, but there are several kinds now in use with which little fault can be found. For bearing the names of the larger-growing herbaceous plants and shrubs a strip of half-inch wood three inches long and two inches wide fastened to a bar of iron one-half inch wide, one-eighth inch thick, and of sufficient length to insure stability in the ground, seems to be an almost perfect label. Space is afforded on the surface for the natural order to which the plant belongs, though this is hardly necessary, excepting in public gardens, and for the common and technical names of the plant with its native country. This information can all be written in letters of sufficient size to be clearly legible at a distance of several yards. For the small-growing herbaceous plants and shrubs a good label is in common use in several of the large British botanic gardens. It was, I think, first brought into use by Robert Lindsay, of the Edinburgh Botanic Garden. This consists of a piece of sheet zinc about two and a half inches long, one and three-quarter inches wide, with the corners cut off. For keeping it in good condition a few inches above the surface of the ground a piece of galvanized wire about two feet long is bent double and the looped part is soldered on to the zinc. The prongs thus formed should be about two inches apart when in the ground. Windstorms and freezing and thawing of the soil have no effect in altering their position. The use of acid preparations for writing on the zinc has to a great extent been discarded. Besides their uncertain durability the appearance of the labels when written on with these preparations is decidedly unattractive. An improved method, first used, if I mistake not, by Henry Pfister, the head-gardener of the Executive Mansion, and successfully utilized in Europe since, is to first give the part of the label intended to be written on at least two coats of good white paint; these should be allowed to dry thoroughly. Before writing on this label it should be given a thin coat of black paint over the white, and while the paint is fresh the name should be written with a sharp-pointed stick. The black paint is thus displaced and the white shows through clearly. If the lettering is done properly it will last several seasons. When it becomes the worse for wear it is easily replaced by soaking the labels in a solution of lye to remove the old paint, when the operation of painting and lettering can be reproduced. The lettering is, of course, more legible when done with a camel's-hair brush in black on a white ground, or in white on a black ground. I prefer the latter method, as the entire label is less conspicuous. Labels for potted plants, especially Orchids and fine foliage plants, when made of strips of wood painted white have a glaring look, which detracts from the appearance of the plants. The method already suggested of painting white first, then black, and lettering in white, can

be done successfully either on the ordinary wooden strips, or on strips of zinc made after the pattern of the wooden ones in common use. For large potted plants, especially in public collections, it is advisable to do away with the long strips of wood or zinc, and use instead pieces of zinc three inches long and of sufficient width to hold the names and habitat. These should be fastened to bent wires and fixed in the pots so that they may be read in a horizontal position. Many persons forego learning the name of a plant on account of the inconvenience of trying to read a perpendicular label, and in the case of perpendicular labels they are drawn out of the pot with the prospect of being placed in the wrong pot after they are examined.

Botanic Garden, Washington, D. C. *G. W. Oliver.*

Correspondence.

The Germination of Conifer-seeds.

To the Editor of Garden and Forest:

Sir,—A great difference exists in the germination of conifer-seeds from different localities. I have never seen this fact stated in print and give my experience in the hope that others may do likewise. The seeds of all the conifers hardy in the east come up at the same time or nearly so. Norway Spruce, White Spruce, Scotch, Austrian and Mountain Pines, the Colorado conifers, Picea pungens and P. Engelmanni, Douglas Spruce, Abies concolor, and other common conifers can all be uncovered at one time. But few seedlings come up ten days after the first ones appear, while conifer-seeds from a warmer climate are very irregular in germinating. I raised a large quantity in California in 1889 and 1890. The kinds already named were sown in beds adjacent to the more tender kinds. Pinus Jeffreyi, P. ponderosa and P. tuberculata started from two to four weeks before the others came up. Abies magnifica, A. grandis and A. amabilis came very scatteringly; the first of these appeared in April and the last in September, and they required careful attention. The various Cupressus varied as much as the Abies. Douglas Spruce, Abies concolor, and Pinus ponderosa, from Colorado, came up much more regularly than the same species from seed collected in California, but the seedlings from California seed made much larger plants at the end of two years. Most of the seed from the Orient acted as those of our native and European species do, being very regular in germinating. The exceptions are Picea Morinda and P. Ajanensis, but as I had very little seed of the latter and that apparently two or more years old, I may be mistaken in this particular. The seeds of Sciadopitys verticellata, Cedrus Deodara and C. Libani are also irregular in time of germinating. Cedrus Atlantica may also be added to the list, but it comes up more evenly than the seeds of other Cedars. The seeds of our native White Pine are the most uneven in germinating of those of the hardy conifers; but although they sometimes come irregularly, this tree can hardly be classed with the species which are irregular in germinating. Thuya gigantea and Libocedrus decurrens are irregular.

Waukegan, Ill. *T. H. Douglas.*

Fruit-growing in Northern New England.

To the Editor of Garden and Forest:

Sir,—Thirty years ago, excepting along the borders and on the islands of Lake Champlain, northern New England gave little promise of ever becoming a region for the successful growing of tree fruits on a commercial scale. The winters in the more elevated parts especially were then bitterly severe and long, as now, and the intervening season, though extremely pleasant and healthful, was found to be so short as to prevent many of the choicer fruits from maturing. The most careful and experienced labors to have fruits mature were not successful. A similar condition existed also with our Canadian neighbors, and in our western states, Minnesota and Iowa especially. A few experiments in growing seedlings from the most hardy known kinds were successful, as in the case of Mr. Peter M. Gideon, who in this way produced the Wealthy apple; and there was also some success in the search for wildings, as in the case of Scott's Winter. But such efforts were too uncertain in their results to be satisfactory. This need of hardy fruits was so marked as to check the growth and prosperity of several states. Strenuous efforts were made about twenty years ago to induce Congress to lend its aid in this direction and some good varieties were thus obtained. The method of distribution through Congressmen was the sending out of scions among their agricultural constituents. But as comparatively few farmers were acquainted with the simple arts of grafting and budding, the general result was not satisfactory. However, some sorts which have proved to be excellent, not only for the north but for the south, were obtained in this way; and these, as they became known (one of them was the very widely grown Yellow Transparent), excited a strong desire for farther study of the tree fruits of northern Europe.

This object was at length effected by private effort, through Professor J. S. Budd, of the Iowa Agricultural College, in association with Mr. Charles Gibb, a wealthy citizen of Montreal, Canada, who was naturally desirous of promoting the interests of his own country in this important work. The labors of these gentlemen were not limited to an investigation of the Apples of northern Germany and Russia; all the tree fruits of those regions were carefully studied through nearly the whole growing season. The results were of great value and importance to the whole range of our northern states, from the Atlantic to the Pacific. I frequently receive requests for scions from northern California, Idaho and Oregon; and already I am in receipt of correspondence showing that the Russian tree fruits are found to have decided value in the states of the Pacific slope.

As for my own experience, I have watched the growth of the trees with daily care, and from year to year I have been more and more impressed and convinced of the great importance of the Russian fruits for a very large portion of our country. I may say that in less than twenty years fruit-growing has become an important rural industry in north-eastern Vermont, and in Maine, and is sure to expand in activity from year to year. Our farmers are rather slow to yield to persuasion in the matter of novelties, but they cannot fail to notice on all sides the increasing numbers of bearing fruit-trees of species and varieties entirely unknown until now. When they see our local markets fully supplied with a class of fruits hitherto seen only in boxes from Boston and New York, it will not be long before the reading and thinking men among them will be taking a hand in such a manifestly pleasant and profitable industry.

Newport, Vt. *T. H. Hoskins.*

Recent Publications.

Eighth Annual Report of the Missouri Botanical Garden. The eighth report of the Missouri Botanical Garden is before us and contains a financial statement of the President of the Board of Trustees, Professor Trelease's report as the Director, and important scientific papers on the flora of the Azores. From the President's report it appears that the income of the property belonging to the Garden was $123,962 in 1896, and that the expenditures for the Garden, including maintenance, purchase of plants and seeds, herbarium, library, scientific investigation, etc., including an expenditure of nearly $5,000 on account of the destructive tornado which visited St. Louis during the summer of 1896, was $40,108.72, nearly the whole of the remainder of the income having been expended in taxes and in the improvement of real estate belonging to the Garden.

From Professor Trelease's report it appears that at the end of 1895 an inventory of the plants cultivated showed 3,921 named species and varieties other than annuals, and that the number during 1896 had somewhat increased. During the year 10,793 specimens were purchased for the herbarium and 5,674 were received as donations or in exchange. To the library 219 volumes and 702 pamphlets were donated, and 571 volumes and 1,216 pamphlets were added by purchase.

Plans for extending the Garden are being prepared by the Messrs. Olmsted, of Brookline, Massachusetts, it being the purpose of the director to use about one hundred acres of meadow ground adjacent to the Garden for the purpose of displaying a plant synopsis, by which it is proposed to show by living plants, as far as it is practicable to do so, the natural groups of the vegetable kingdom. The practical and theoretical instruction for garden students, which has often been alluded to in these columns, has been continued; and the report shows that this flourishing institution continues to perform a valuable service for botany and horticulture, and that splendid use is being made of Mr. Shaw's noble bequest to his adopted city.

By far the largest part of the report is devoted to a paper

by J. Cardot on the Mosses of the Azores, with eleven plates, and to Professor Trelease's botanical observations on the same group of islands, the result of his visits to them in the summers of 1894 and 1896. Fifty-five plates accompany this paper, which, in addition to a general discussion of the Azorean flora and the agriculture and horticulture of the islands, contains a catalogue of all the indigenous plants known to inhabit them.

Notes.

A branch of the Yokohama firm of Suguki & Iida, dealers in Japanese plants, bulbs and seeds, has been opened in this city at No. 15 Broadway.

A bronze monument erected in honor of Malpighi, the distinguished Italian botanist of the seventeenth century and the author of the *Anatome Plantarum*, was unveiled at Crevacore, near Bologna, on the 8th of September last.

Fringed Gentians, from woodland borders in northern New Jersey, have been favorites for corsage bouquets during the past few weeks, and these flowers have been so plentiful that bunches containing from fifty to one hundred could be bought for $1.00.

In the *Orchid Review* for September A. H. Sinee reports the successful results of applying fertilizing salts to Orchids, a number of plants of Cattleya Trianæ having been experimented on for two years. Equal quantities of nitrate potash and nitrate ammonia were used at the rate of two and a half grains to one gallon of rain-water. Under this treatment the plants made a stronger growth, and produced a greater number of flowers, and these were brighter in color.

A figure of Lycoris squamigera in a recent number of the *Botanical Magazine* (t. 7547) reminds us that this noble pink-flowered Chinese Amaryllis, first figured in the third volume of this journal (page 176), grows in California with surprising luxuriance. It is freely used in Golden Gate Park, at San Francisco, where it grows without irrigation, increasing rapidly, and produces in September abundant flower-stems three or four feet high. It is more vigorous and beautiful, and apparently much more at home there than in the eastern states, where, however, it is perfectly hardy.

A few specimens of the new rose, Dean Hole, have been on exhibition in the show-window of W. H. Brower & Sons, on Broadway, within the past week. These partly-opened firm buds suggest flowers of large size when fully grown. The Dean Hole rose differs from the cream-tinted President Carnot, which pales under gaslight, in that its rich shell-pink petals are particularly beautiful in artificial light. For this reason it is likely to be in special demand for dinner decorations, and it is expected that the supply will be large enough this winter to provide some of the smaller flowers for this use. The stems are strong and the foliage is luxuriant and pleasing. This rose was first shown two years ago at the dinner given in honor of Dean Hole in this city.

The Department of Agriculture has recently published an important work on the fibres and fibrous substances of all countries, entitled *A Descriptive Catalogue of the Useful Fibre-plants of the World*. The author, Mr. Charles Richards Dodge, special agent in charge of fibre investigations in the department, asks that any information about fibre-plants known to have been employed either commercially or in what may be termed native uses, such as for rough textiles, cordage, fishing nets and lines, basketry, etc., that has been omitted from this work be reported to him. He would also be glad to hear of any native or aboriginal names by which fibre-plants are known in the countries where they grow, which he has not been able to give. He asks, too, for notes on any errors in nomenclature, and for all such information as may enable him to prepare a revised edition of this important work, which is the outcome of a vast amount of patient labor, scientific investigation and technical knowledge.

The horticultural department of the American Institute Fair in this city included many notable exhibits during last week. Stove and greenhouse plants were among the principal attractions. Messrs. Ellwanger & Barry, Rochester, New York, and C. C. Corby, Montclair, New Jersey, had highly creditable exhibits of grapes in large variety. A new quince of large size and regular form won a special prize for Luther Burbank, Santa Rosa, California. In a large collection of semi-tropical fruits was an immense cluster of dates from Riverside, California. Guavas, from Florida, were shown in large numbers, and their peculiarly sweet fragrance proved almost oppressive even in a large hall. This is said to be the first time this delicate fruit has been successfully shipped and exhibited in the northern states. Pomegranates, from California, were also shown, and the fruits of Zizyphus vulgaris, Jujube, from Augusta, Georgia. A collection of 500 species of grasses made by Mr. J. E. Lager in Colombia, South America, was one of the most attractive and interesting features of the exhibition.

The first of this season's Albemarle Pippins, from Virginia, were offered here last week and sold mainly for export at from $5.00 to $8.00 a barrel. Owing to dry weather during the past month there is more second-grade fruit in this crop than was expected; this means smaller apples, lower prices, and, according to experience in other years, good keeping qualities. Selected Yellow Globe peaches and the white Stevens Rareripes, of choice quality, from the Hudson River district, sell at $1.50 for a basket holding a peck of the fruit. Large Beurre Bosc pears, from New Jersey, sell for seventy-five cents a dozen. Among other pears of rich quality are Beurre D'Anjou, from California, which lack the rich color sometimes seen in the eastern-grown fruit. The first Easter Beurres, from California, have already arrived; these firm pears, which are at their best in early spring, are now mainly sold for export to the West Indies and Europe. Small muskmelons, from Colorado, the last of this season, cost $2.50 a dozen. Other specialties in the fancy fruit-stores are handsomely colored mangoes, from Venezuela. These sell at seventy-five cents a dozen, a price warranted by the showy and really palatable specimens, which are altogether the best heretofore seen in this city. Cultivated cob-nuts, or English filberts, have been imported within the past week, from Kent, England. These fresh nuts are sold in their husks and fifty cents a pound is willingly paid by those who esteem their delicate meats. Chestnuts, from cultivated trees in New Jersey, sell for forty cents a quart. Eighteen of these immense nuts weigh a pound and two dozen fill a quart measure. Some of the largest weigh two ounces each.

The Spindle-tree, a familiar shrub in American gardens, was recently described in an interesting article in the *Kew Bulletin of Miscellaneous Information*, which first appeared in *St. James Gazette*. It was stated that the Spindle-tree, Euonymus Europæus, is a native European shrub or small tree possessing great ornamental merit, and is too often overlooked by landscape-gardeners. It is deciduous, but its broadly lanceolate leaves of a wavy irregular outline, with minutely serrated edges, turn, before they fall, to a deep rich crimson. The small pale green cross-like blossoms, which open in May, are inconspicuous, but the fruit, when ripe in October, has all the appearance of a flower of brilliant hues. The fruit, indeed, from its color and shape, is the most distinctive as well as most beautiful feature of the tree. Each berry is four-lobed and of a lively rose-pink. When quite ripe the lobes open, disclosing four large seeds covered with a deep orange-colored membrane, the seeds and the husk then presenting a curious but attractive contrast. The wood of the Spindle-tree is exceedingly tough, and the husks and stems of the berries partake of the same character, so that long after the leaves have fallen these remain to enliven the wintry landscape. Birds will not touch them, and with human beings they act as a strong emetic and purgative. The wood is so compact and tough that it is hard to break and almost impossible to splinter. In the days of domestic industries, when every notable maid minded her wheel, it was in request for the making of spindles; hence its common name, by which it is known in Germany and Italy. The wood is also used for making the pointed ends of ox-goads, whence is derived another name of Gatter-tree, or Prick-wood. Chaucer calls the berries gaitre-berries, and in the *Nennes Preestes Tale* recommends them against ague and the humors. In Ireland it is called Peg-wood, because shoemakers use it for pegs for shoes. In France it is also known by the name of Priest's-cap, from the resemblance of the berry in shape to a biretta. Though goads and spindles are gone out of fashion, the wood is still employed in the making of a variety of small wares, such as skewers, toothpicks and fine pins for cleaning watches, and artists are said to prefer the charcoal prepared from the branches to any other, partly from its excellent quality and partly because it is easily effaced. A variety of the common Spindle-tree, bearing berries with white instead of pink husks, is occasionally found; but, although the contrast between the white husks and the orange seeds is curious, the effect is less pleasing than that presented by the berries of the commoner sort.